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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/520,677

01/11/2005

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EXAMINER

WHITE, EVERETT NMN

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/520,677	Applicant(s) YAGINUMA ET AL.	
	Examiner EVERETT WHITE	Art Unit 1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 16 and 18-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 16 and 18-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 28, 2008 and September 26, 2006 has been entered.
2. The amendment filed August 28, 2008 has been received, entered and carefully considered. The amendment affects the instant application accordingly:
 - (A) Claims 4-15, 17 have been canceled;
 - (B) Claims 1, 18 and 19 have been amended;
 - (C) Comments regarding Office Action have been provided drawn to:
 - (I) 112, 1st paragraph rejection, which has been maintained;
 - (II) 102(b) rejection, which has been withdrawn;
 - (III) 103(a) rejection, rendered moot by new ground of rejection over newly cited US Patent.
3. Claims 1-3, 16 and 18-25 are pending in the case.
4. The text of those sections of Title 35, U. S. Code not included in this action can be found in a prior Office action.

Foreign Priority Claimed

5. This application is a 371 of PCT/JP03/08793 International Filing Date: July 10, 2003 published in Japanese, which claims foreign priority to Japan 2002-204740 under 35 U.S.C. 119(a)-(d). It is noted that PCT/JP03/08793 and Japan 2002-204740 (July 12, 2002) are in Japanese, no translation into English.

Claim Rejections - 35 USC § 112

New Ground of Rejection

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 1623

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 18 and 20-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In paragraph [0048] of the published version of this application, the text thereof discloses “[a]lthough raw cotton, papilus grass, paper mulberry, paper bush, gampi, etc., are also usable, their use is sometimes not preferred because these raw materials are difficult to obtain stably, they contain non-cellulose components in a large amount, and they are difficult to handle” (see U.S. 2005/0272836, page 3, paragraph [0048], lines 1-5). However, the text of Claim 18 using the terminology of said published application does not exclude “the non-cellulose components” so indicated in the published application in view of the instantly claimed language, which renders the claims indefinite since it is not clear in the claims what “non-cellulose components” has been excluded.

8. Applicant's arguments with respect to Claims 18 and 20-2 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

New Ground of Rejection

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

Art Unit: 1623

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 1-3, 16 and 18-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinand et al (US Patent No. 5,964,983) in view of Turbak et al (US Patent No. 4,483,743) or Battista (US Patent No. 3,146,168) or Kajita et al (JP Pub. No. 58013713 A).

Applicants claim a water-dispersible cellulose, the water dispersible cellulose being derived from a plant cell wall having starting cellulosic substance, wherein the starting cellulosic substance has an α -cellulose content of 60-90% by weight and an average degree of polymerization of 400-1300, or the starting cellulosic substance has α -cellulose content of 60-100% by weight and an average degree of polymerization of 1300, the water dispersible cellulose being crystalline having a crystallinity of more than 50%, and fine fibrous, and the water-dispersible cellulose comprising 30% by weight or more of a component stably suspensible in water and having a loss tangent of less than 1, when made into a 0.5% by weight aqueous dispersion.

The Dinand et al patent discloses microfibrillated cellulose comprising 50% crystalline, which embraces the instantly claimed water-dispersible cellulose, wherein the cellulose is crystalline and in the form of fine fibrous. The Dinand et al patent embraces the instant claims since the instant specification recites on page 13, lines 23-26 that a water-dispersible cellulose can be said to have a crystallinity exceeding 50%, as long as the over-all crystallinity is 50% or more. Example 22 of the Dinand et al patent discloses a procedure for purification of potato pulp after the starch had been

Art Unit: 1623

extracted, which resulted in the chemical analysis of cellulosic residue indicating an average degree of viscosimetric polymerization in the order of 1,000, 93% of glucose, and the suspension of microfibrils from the potato pulp being stable. The viscosimetric polymerization of 1,000 disclosed in the Dinand et al patent falls within the instantly claimed average degree of polymerization of 400-1300 and 93% glucose embraces the instantly claimed alpha cellulose content 60% to 100%. Also, see column 1, lines 15 and 16 of the Dinand et al patent wherein the cellulose thereof is intended for use as a thickener to stabilized dispersion for low calorie food products and low fat or low cholesterol food products, which embraces the food composition of instant Claim 16.

The water-dispersible cellulose of the instant claims differs from the crystalline microfibrillated cellulose of the Dinand et al patent by claiming that the water-dispersible cellulose comprises 30% by weight or more of a component stably suspensible in water when made into a 0.5% by weight aqueous dispersion.

The Turbak et al patent discloses substantially stable suspensions of microfibrillated cellulose (see abstract) and teaches that substantially stable suspension can be define as a suspension in water which upon dilution to 0.5% and upon standing for one hour, maintains at least 60% of its original volume, i.e. contains no more than 40% of clear liquid (see column 3, lines 28-32). Since the Dinand et al patent discloses microfibrillated cellulose which is 50% crystalline, it would be obvious for the suspension stability of the microfibrillated cellulose to be reduce to half, from 60% stability of the microfibrillated cellulose of the Turbak et al to 30% stability for the microfibrillated cellulose of the Dinand et al patent which is 50% crystalline.

The Battista patent, which discloses cellulose crystallite aggregates, also discloses wood pulp having 93% alpha cellulose (see column 2, lines 54 to 56) and a degree of polymerization of 500 (see column 2, line 30). See column 3, lines 28-30 of the Battista patent wherein it is indicated that the aggregates thereof provide stable dispersions. Also see the first paragraph of column 3 of the Battista patent wherein the aggregates may be disintegrated to form products having a particle size less than one micron to about 300 microns, which suggests a microfibrillated cellulose product.

The water-dispersible cellulose of the instant claims further differs from the crystalline microfibrillated cellulose of the Dinand et al patent by claiming that the water-dispersible cellulose has a loss tangent of less than 1, when made into a 0.5% by weight aqueous dispersion.

The Kajita et al publication discloses fiber manufactured from cellulose derivative solutions in a liquid crystal state, which suggests fibrous cellulose comprising crystalline components as instantly claimed. Kajita et al discloses that the cellulose derivative solution thereof comprises a mechanical loss tangent of 0.06, which is within the range of the loss tangent disclosed in the instant claims of being less than 0.6.

One of ordinary skill in this art would be motivated combine the teaching of the Dinand et al patent with the teaching of the Turbak et al patent, Battista patent and Kajita et al publication since each of the documents disclose fibrillated celluloses.

It would have been obvious to one of ordinary skill in the art at the time the invention was made that the suspension stability in water of the 50% crystalline microfibrillated cellulose of the Dinand et al patent would be reduced to 30% suspension stability in view of the recognition in the art, as evidenced by the Turbak et al patent, that the suspension stability of microfibrillated cellulose that is non-crystalline has a suspension stability of 60%. Reduction of the components that allows for water suspension stability in the microfibrillated cellulose of the Turbak et al patent obviously would result in decrease of the water suspension stability of the microfibrillated cellulose. It also would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the crystalline microfibrillated cellulose of the Dinand et al patent with a microfibrillated cellulose having a high alpha content and loss tangent of less than 1 in view of the recognition in the art, as evidence by the Battista patent and Kajita et al publication, that such cellulose products increases the dispersible stability of the product when formed into a suspension.

11. Applicant's arguments with respect to Claims 1-3, 16 and 18-25 have been considered but are moot in view of the new ground(s) of rejection.

Information Disclosure Statement

12. The information disclosure statement filed January 11, 2005 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

13. The information disclosure statement filed January 11, 2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Summary

14. Claims 1-3, 16 and 18-25 are rejected.

Examiner's Telephone Number, Fax Number, and Other Information

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Everett White whose telephone number is 571-272-0660. The examiner can normally be reached on 9:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia A. Jiang can be reached on 571-272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO

Art Unit: 1623

Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Everett White/

Examiner, Art Unit 1623

/Shaojia Anna Jiang/

Supervisory Patent Examiner, Art Unit 1623